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Title: Antioxidant system in Uromastyx philbyi during hibernation and activity periods

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Abstract: Hibernation is an extreme physiological state characterized by profound decreases in oxidative metabolism and body temperature during bouts of prolonged torpor, interrupted by brief periods of arousal with sudden increases in oxidative metabolism, with alterations in antioxidant defenses. We monitored the activities of antioxidant enzymes and oxidative stress during hibernation and activity in Uromastyx philbyi. 20 animals were used, 10 of which were collected in the hibernation season (group I) and the other 10 collected during the active period (group II). Blood, liver, brown adipose tissue (BAT) and brain samples were used to determine free radical and antioxidant levels. The results indicated a significant decrease of free radicals and increase of vitamin C, especially in serum during hibernation. In contrast, during the active period free radicals, enzymatic antioxidants as glutathione peroxidase (GPX), glutathione reductase (GR), superoxide dismutase (SOD) and catalase (CAT) and non-enzymatic antioxidants as reduce glutathione (GSH) and vitamin E increased in all studied tissues. It can be concluded that Uromastyx philbyi has a strong antioxidant defense system that protects it from the injurious effects of free radicals either at the periods of arousal or during activity periods. (C) Versita Sp. z o.o.

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